

# Flowbox Circu

## Instruction manual

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# Flowbox Circu

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## 1 Important basic information

### 1.1 Liability restriction

The contents of these operating instructions were generated with the consideration of the valid laws and standards. The unit was developed according to the state of the art<sup>1</sup>.

The manufacturer does not accept liability for damages resulting from:

- ▶ Disregard/non-observance of the operating instructions
- ▶ Intentional false application
- ▶ Non-conventional operation
- ▶ Use by untrained personnel (in maintenance and repair work, etc.)
- ▶ Technical changes to the device, that had not been agreed upon with the manufacturer
- ▶ Use of replacement parts, that had not be provided by the manufacturer

### 1.2 Responsibility of the operator

The valid security, accident prevention, and environmental protection directives for the use of the equipment and the surrounding are must be adhered to.

Particularly relevant:

- ▶ The operator must assure that these operating instructions are available for the entire service life of the Flowbox Circu.
- ▶ The operator must assure that the maintenance intervals described in these operating instructions are carried out.
- ▶ The operator must regularly review and test all security measures for their functionality and completeness.

## HINWEIS



**Note national standards and guidelines for the assembly and operation of the Flowbox Circu.**

### 1.3 Documentation

#### 1.3.1 Contents and construction

These operating instructions are a component of this device. It contains directions and information for the secure handling of the equipment and must be available to every user during the entire service life of the equipment.





These operating instructions are intended for trained personnel.

<sup>1</sup> Subject to technical modifications without prior notice!

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## 1.3.2 Designated mark of the documentation

The following reference types are used:

Reference type	Representation	Meaning
Acute danger	 <b>DANGER</b>	Dangerous situation, that will surely result in a serious injury or death if it is not avoided
Danger and serious injury	 <b>WARNING</b>	Dangerous situation, that could result in a serious injury or death if it is not avoided
Danger of slight or moderately serious injuries	 <b>CAUTION</b>	Dangerous situation, that could result in a moderately serious injury if it is not avoided
Information, ease of operation	 <b>NOTE</b>	designates information, that is not of concern to personal damages, but, for example, refers to property damages

△ *refers to a general safety tip*

■ *refers to a handling direction*

⇒ *refers to the consequences of an action*

## 1.4 Target group

These operating instructions are intended for trained personnel.

The operator of the device must provide for appropriate and secure prerequisites corresponding to these operating instructions.

**Specialist personnel** – Trained personnel who recognize the dangers of the Flowbox Circu and is familiar with the technology of the equipment. Specialist personnel are instructed and capable of mounting, maintaining, and repairing the equipment.

## 1.5 Replacing worn components

Note that the Flowbox Circu parts contained, according to the intensity of use and the prescribed care and maintenance, are subject to a technically related wear. This particularly concerns mechanical parts and parts that come into contact with hot water and steam, for example, tubes, gaskets, valves, and the like.

Wear contingent defects represent naturally appropriate use and not a deficiency and are therefore not subject to the warranty or a guarantee, even if these defects and incorrect function has occurred in equipment always operated only by trained specialist personnel. For this please consult your specialist supplier.

## 2 Safety

### 2.1 Important safety tips

- ⚠ ***Read these operating instructions carefully before using.***
- ⚠ ***Only connect the Flowbox Circu to an energy source with the appropriate network voltage.***
- ⚠ ***Before maintenance, cleaning, and repair work, the energy supply to the Flowbox Circu must be disconnected.***
- ⚠ ***Maintenance, cleaning, and repair work may only be done exclusively by trained specialists.***
- ⚠ ***If damages occur to the Flowbox Circu or it no longer functions correctly, the Flowbox Circu may no longer be used. In this case, immediately consult your specialist supplier.***
- ⚠ ***Note the maintenance tips and intervals.***
- ⚠ ***Protect the Flowbox Circu against the effects of weather.***
- ⚠ ***Never use the Flowbox Circu outside.***
- ⚠ ***For your own security and the longevity of the Flowbox Circu , you should only use original replacement parts.***
- ⚠ ***The equipment may only be used for the application for which it was intended.***

### 2.2 Intended use

#### 2.2.1 Use area

The Flowbox Circu is constructed according to the state of the technology and recognized safety regulations. For the unintended use, incorrect use, incorrect connection or unqualified maintenance/repair by untrained personnel, liability for possible damages is not covered. Furthermore, all guarantee services in such cases are excluded.

The Flowbox Circu is used to custom regulate drinking water temperature. The thermostatic mix valve constantly maintains the warm water temperature. The Flowbox Circu is completely pre-assembled and is designed to be mounted on a wall.


The Flowbox Circu is not designed for use by people (including children) with restricted physical, sensory or intellectual capabilities and/or insufficient technical knowledge and experience.

#### 2.2.2 Safety-related environmental conditions


- The Flowbox Circu may not be mounted and operated outside.
- The parts and components are not UV resistant.
- The installation location of the Flowbox Circu must be chosen so that maintenance and repair work can be done.

# Flowbox Circu


## 2.3 References to the operating instructions


NOTES	
	<p>Carefully read these operating instructions before using.</p> <p>For the safe operation of the device, in addition to the directions in this operating guide, regional directives (for example, accident prevention directives), must be made available to the operators of the device.</p>

## 2.4 Additional dangers and precaution measures

DANGER	
	<p><b>Electric energy!</b></p> <p>Danger of electric shock.</p> <ul style="list-style-type: none"><li>➤ Do not grasp live cables and components with damp hands.</li><li>➤ Note the accident prevention directions when in contact with electrical currents.</li></ul>

WARNING	
	<p><b>Hot water!</b></p> <p>Severe scalding is possible.</p> <ul style="list-style-type: none"><li>➤ Mount appropriate scald protection (for example security fittings or a temperature mix regulator battery) on each tap.</li></ul> <p>Further references for scald protection may be found in DIN 1988, Sheet 2, Nr. 4.2.</p>

WARNING	
	<p><b>Hot water!</b></p> <p>Severe burns are possible.</p> <ul style="list-style-type: none"><li>➤ When emptying the Flowbox Circu do not reach into the hot water.</li><li>➤ Before doing maintenance work, cleaning, and repairs, allow the Flowbox Circu to cool off.</li></ul>

CAUTION	
	<p><b>Work on the equipment by insufficiently trained personnel!</b></p> <p>Possible person and property damages.</p> <ul style="list-style-type: none"><li>➤ Maintenance, cleaning, and repair work may only be done by trained specialists.</li></ul>

# Flowbox Circu

## 3 Component overview

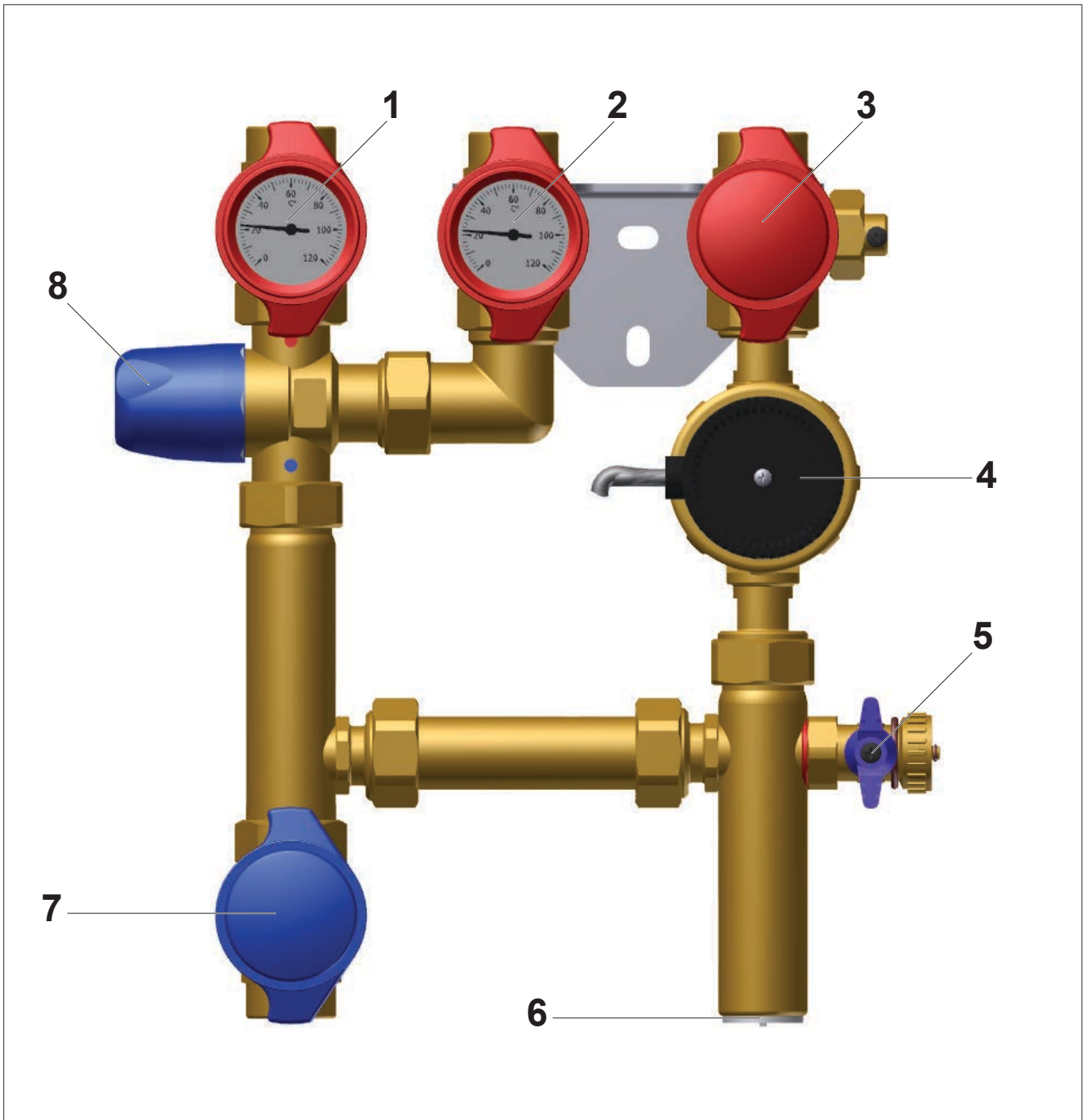


Fig. 1: Component overview

- |   |                     |   |   |
|---|---------------------|---|---|
| 1 | Hot water intake    | 5 | Flush and refill setup with emptying tap (if available) |
| 2 | Mixed water outflow | 6 | Circulation connection to the storage                   |
| 3 | Circulation return  | 7 | Cold water intake                                       |
| 4 | Circulation pump    | 8 | Thermostatic mix valve                                  |

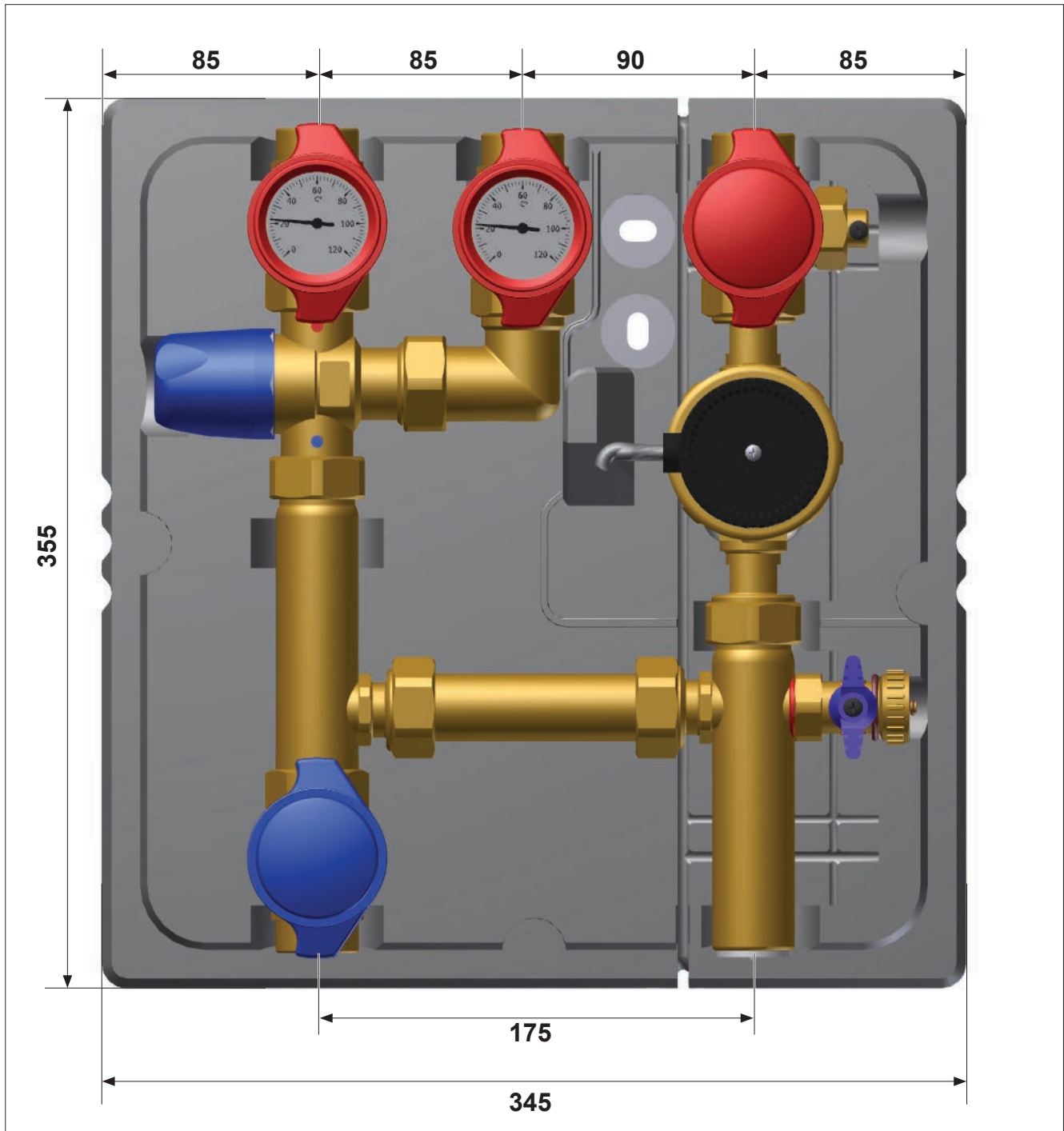


Fig. 2: Dimensions [mm]



## 4 Assembly and initial startup

### 4.1 Safety

#### DANGER



##### Electric energy!

Danger of electric shock.

- Do not grasp live cables and components with damp hands.
- Note the accident prevention directions when in contact with electrical currents.

#### CAUTION



##### Danger of property damage!

The Flowbox Circu is not protected against sprayed and dripping water.

- Only mount the Flowbox Circu in a dry place.

#### CAUTION



##### Property damage from pressure blow outs!

Pressure blow outs result from the rapid release of the shut off cocks.

- Always open shut off cocks slowly and in a controlled manner.

#### CAUTION



##### Bad water quality!

Hard water forms chalk deposits in the Flowbox Circu that diminishes the water quality.

- Measure the water hardness in the provisioning system.
- Install a water softening unit for water with a hardness degree of 17° dH.

#### NOTE



The assembly and startup of the Flowbox Circu may only be done by qualified personnel.

Adhere to the national standards and guidelines for the assembly and operation of the Flowbox Circu !

Do not may any changes to the components (for example pumps, valves, etc.), to the input and output flow directions and /or security measures that could impair the operational reliability of the Flowbox Circu.

Ensure that the energy supply of the Flowbox Circu is always accessible.

# Flowbox Circu

## 4.2 Assembly

### NOTE



Mount the Flowbox Circu at eye level.

- Disassemble the front covering of the Flowbox Circu.
- Mark the drill holes for the assembly of the Flowbox Circu .

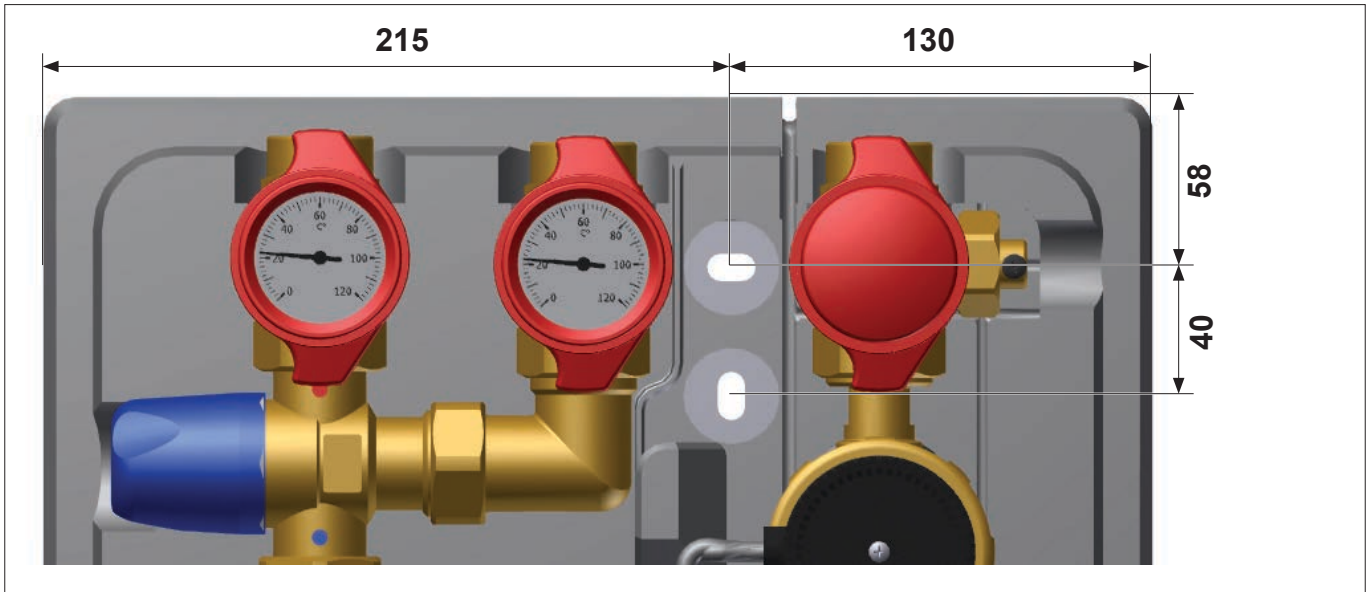


Fig. 3: Drill measurement [mm]

- Drill the holes corresponding to the screw size and plug size.
- Insert the screw plugs.
- Screw the bolt screws into the plugs.
- Place the piping sets and secure them with the nuts (fig,Abb. 4 on page 11).
- Dismantle the shut off cocks from the line connections of the Flowbox Circu.

- Close the hot water intake (Pos. A), the mixed water outflow (Pos. B), the circulation return (Pos. C), the circulation return to the storage (Pos. D), as well as the cold water intake (Pos. E).

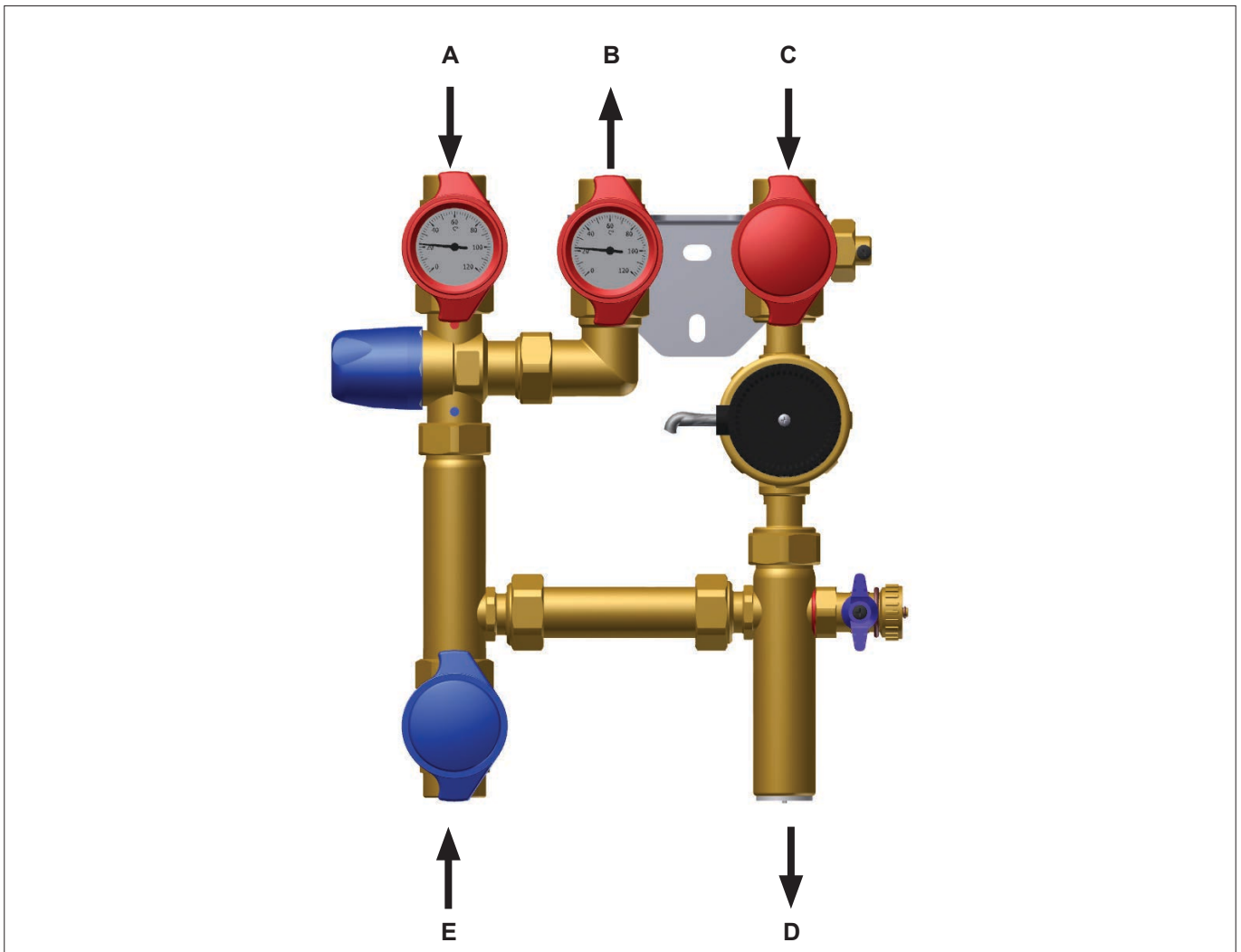


Fig. 4: Water connection Flowbox Circu

- Check that all screw connections are firmly placed.
- Check that the Flowbox Circu is secure.

### 4.3 Initial startup

- Connect all lines to the Flowbox Circu.
- Slowly fill the system with water.

## CAUTION



### Property damage from pressure blow outs!

Pressure blow outs result from the rapid release of the shut off cocks.

- Always open shut off cocks **slowly** and in a controlled manner.

- Connect the energy supply.
- ⇒ *The Flowbox Circu automatically turns itself on after the energy supply has been connected.*

## 5 Maintenance

### 5.1 Safety

#### DANGER



#### Electric energy!

Danger of electric shock.

- Do not grasp live cables and components with damp hands.
- Note the accident prevention directions when in contact with electrical currents.
- Disconnect the energy source of the Flowbox Circu before maintenance, cleaning, and repair and secure it from being reactivated.

#### WARNING



#### Hot water!

Severe burns are possible.

- When emptying the Flowbox Circu do not reach into the hot water.
- Allow the Flowbox Circu to cool off before doing maintenance work, cleaning, and repairs.

#### WARNING



#### Hot surfaces!

Severe burns are possible.

- Do not grasp pipes and components during maintenance, cleaning, and repair work.
- Before doing maintenance work, cleaning, and repairs, allow the Flowbox Circu to cool off.
- Wear heat-resistant security gloves if work is required on hot components.

### 5.2 Recommended maintenance intervals

Task	Interval
Testing the shut off cocks and ball cocks for clearance	annually
Pay attention to the development of noises in the pump	annually
Testing the Flowbox Circu for leaks (visibility test)	annually
Testing the thermostatic mix valve for functionality	annually

# Flowbox Circu

## 5.3 Maintenance work

### 5.3.1 Disassembling the circulation pump

- Disconnect the energy source of the Flowbox Circu and secure it from being reactivated.
- Disassemble the front covering of the Flowbox Circu.
- Close the hot water intake (Pos. A, fig. 4 on page 11), the mixed water outflow (Pos. B, fig. 4 on page 11), the circulation return (Pos. C, fig. 4 on page 11), the circulation return to the storage (Pos. D, fig. 4 on page 11) as well as the cold water intake (Pos. E, fig. 4 on page 11) on.
- Turn off the Flowbox Circu pressure.

### NOTE



During the shutting off of the pressure Flowbox Circu and the dismantling of the circulation pump, fluid may flow out.

- Loosen the wiring of the circulation pump.
- Loosen the nuts (Pos. A) and dismantle the circulation pump (Pos. B).

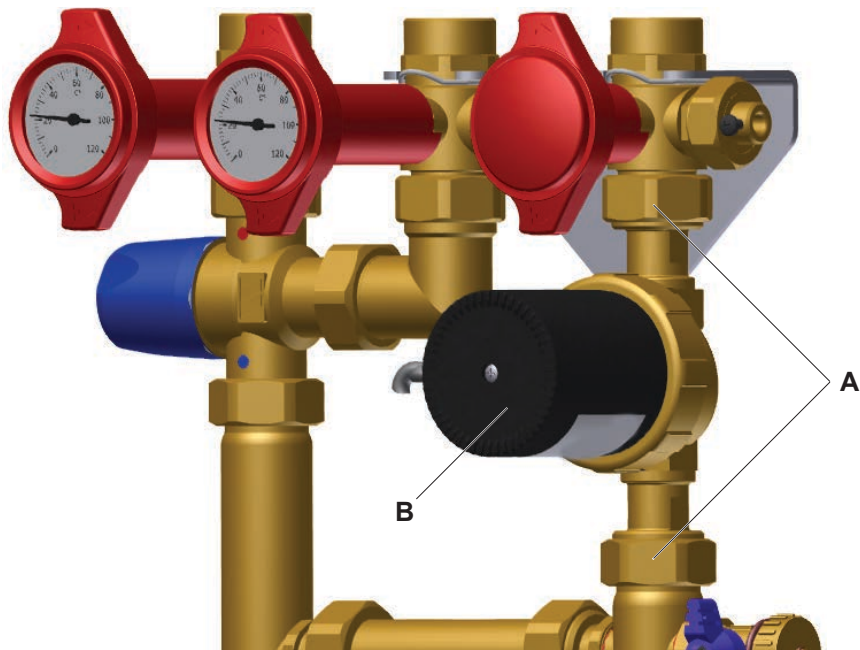


Fig. 5: Disassembling the circulation pump

## 5.3.2 Mounting the circulation pump

- Replace damaged or defective gaskets if necessary.
- Position the circulation pump (Pos. B, see fig. 5 on page 13) and firmly screw in the nuts (Pos. A, See fig. 5 on page 13) (Tightening torques, see „Technical information“ on page 16).
- Electrically connect the circulation pump.
- Slowly open the hot water intake (Pos. A, fig. 4 on page 11), the mixed water outflow (Pos. B, fig. 4 on page 11), the circulation return (Pos. C, fig. 4 on page 11), the circulation return to the storage (Pos. D, fig. 4 on page 11) as well as the cold water intake (Pos. E, fig. 4 on page 11) on.
- Reattach the energy supply of Flowbox Circu .

## 5.3.3 Dismantle thermostatic mix valve

- Disconnect the energy source of the Flowbox Circu and secure it from being reactivated.
- Disassemble the front covering of the Flowbox Circu.
- Close the hot water intake (Pos. A, fig. 4 on page 11), the mixed water outflow (Pos. B, fig. 4 on page 11), the circulation return (Pos. C, fig. 4 on page 11), the circulation return to the storage (Pos. D, fig. 4 on page 11) as well as the cold water intake (Pos. E, fig. 4 on page 11) on.
- Turn off the Flowbox Circu pressure.

### NOTE



During the shutting off of the pressure of the Flowbox Circu and the dismantling of the thermostatic mix valve, fluid may flow out.

- Loosen the nuts (Pos. A) and dismantle the thermostatic mix valve (Pos. B).

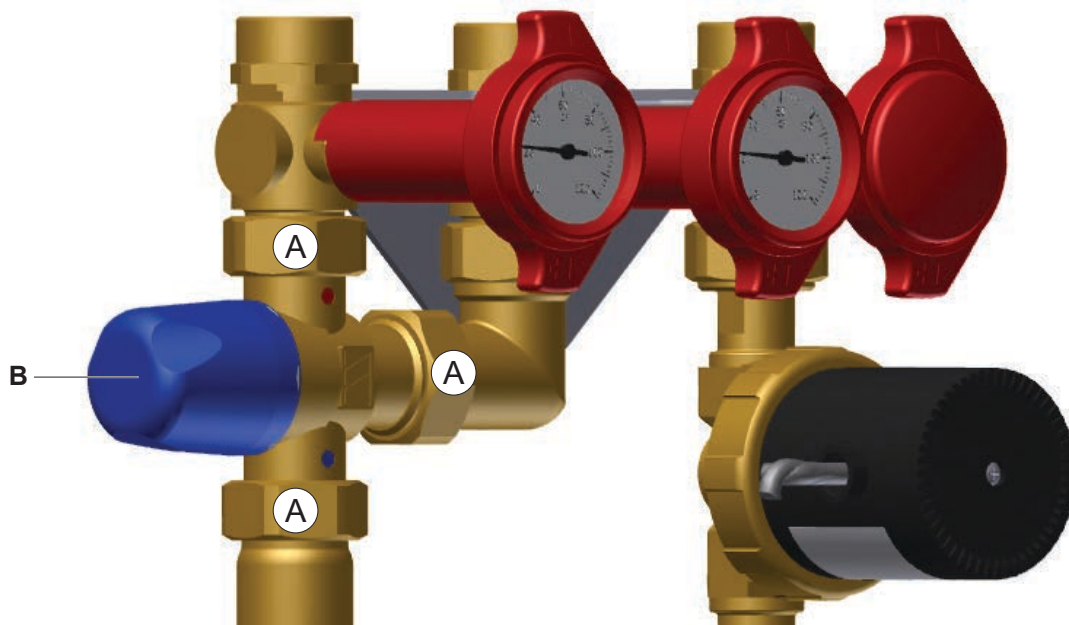


Fig. 6: Dismantling the thermostatic mix valve

## 5.3.4 Mounting the thermostatic mix valve

- Replace damaged or defective gaskets if necessary.
- Position the thermostatic mix valve (Pos. B, see fig. 6 on page 14) and firmly screw in the nuts (Pos. A, see fig. 6 on page 14) (Tightening torques, see „Technical Data“ on page 16).
- Connect the thermostatic mix valve and adjust for the desired temperature.
- Test the adjusted temperature.
- Slowly open the hot water intake (Pos. A, fig. 4 on page 11), the mixed water outflow (Pos. B, fig. 4 on page 11), the circulation return (Pos. C, fig. 4 on page 11), the circulation return to the storage (Pos. D, fig. 4 on page 11) as well as the cold water intake (Pos. E, fig. 4 on page 11) on.
- Reattach the energy supply of Flowbox Circu.

# Flowbox Circu

## 6 Technical Data

General	
Dimensions (l x h x w)	355 x 345 x 355 mm
Weight	7,5 kg
Energy supply	See pump documentation
Maximum operating pressure	10 bar
Maximum allowed operational temperature	85 °C

Circulation pumps
Technical data regarding the circulation pumps is found in the respective pump documentation.

Tightening torque for screw joints with Reinz AFM 34 gaskets	
$\frac{3}{4}$ "	35 Nm
1 "	55 Nm
1 $\frac{1}{2}$ "	130 Nm

Thermostatic mix valve	
Maximum static pressure	10 bar
Operating pressure	0,2 - 5 bar
Hot water entry temperature	52* - 85 °C
Cold water entry temperature	5 - 20 °C
Admissible ambient temperature	30 - 65 °C
Maximum volume flow	57 l/min
Minimum volume Flow	5 l

\* Minimum differential temperature of Hot water/Mixed water temperature = 10°C.




# Flowbox Circu

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## 7 Shutdown, redeployment

### 7.1 Shutdown


- Disconnect the energy source of the Flowbox Circu and secure it from being reactivated.

<b>DANGER</b>	
	<p><b>Electric energy!</b></p> <p>Danger of electric shock.</p> <ul style="list-style-type: none"><li>➤ Do not grasp live cables and components with damp hands.</li><li>➤ Note the accident prevention directions when in contact with electrical currents.</li><li>➤ Disconnect the energy source of the Flowbox Circu before maintenance, cleaning, and repair and secure it from being reactivated.</li></ul>

- Disassemble the front covering of the Flowbox Circu.
- Close all stop cocks of the water connections (see Fig. 4 on page 11).

#### For extended periods of shutdown:

- Turn off the Flowbox Circu pressure.

<b>NOTE</b>	
	<p>During the shut off of the pressure, water Flowbox Circu may flow out.</p>

### 7.2 Reactivating

- Slowly open all stop cocks of the water connections (see Fig. 4 on page 11).
- Slowly reapply Flowbox Circu **the** pressure and ventilate if required.
- Reattach the energy supply of Flowbox Circu .

## 8 Disassembly

Disassembly may be necessary for two reasons:

- In order to install it someplace else.
- To dispose of the equipment.

### NOTE



If the Flowbox Circu is to be reconstructed in another location, precautions must be taken in the disassembly. All construction parts and fastenings must be carefully disassembled, marked, and packed for transport if necessary. This is to guarantee that in the reconstruction, all parts can be correctly matched and mounted again in the appropriate place.

## 9 Disposal

### 9.1 Security

### WARNING



**Pollution of the environment and ground water may result by improper disposal!**

- In the disposal of installation parts and operating material, the rules and guidelines of the directives in the country of operation must be followed.

### 9.2 Disposal

- Separate the components of the Flowbox Circu according to reusable material, dangerous material, and operating material.
- Dispose of the components of the Flowbox Circu or take them to the recycling center.

